

HYDRAULIC RAM BENCHES

Keeping hydraulic equipment maintained in good working order is fundamental to the smooth running of any mine site. Pneutorque® pneumatic wrenches have proved outstanding in the application of releasing and re-tightening the gland nut on the rod assembly of hydraulic cylinders. On the largest equipment, the gland nut release torque is sometimes in excess of 100,000 N.m and this fact has resulted in the development of Norbar's largest Pneutorque®, the 300,000 N.m output PT15.



Hydraulic Ram Bench

VALVE ACTUATION

The combination of speed, lightness, low noise, reduced vibration and torque control makes Pneutorque® wrenches ideal for many non-bolting applications. Of these applications, it is in the field of valve actuation and valve grinding in the alumina refining industry that Pneutorques® have so far had the biggest impact. Two speed tools have proved the most popular as they provide rapid opening and closing of the valve together with high torque for grinding the caustic deposit that accumulates on the valve seat. However, it is not just in the alumina refining industry that Pneutorques® are used for valve actuation. The actuation of water valves and gas valves are now common applications.



Pneutorque® PTM-52 Series Stall Model

'SPECIAL' ENGINEER TO ORDER PRODUCT SERVICE

The diverse needs of the mining and mineral refining industry mean that Norbar's standard products are not always suitable. This is particularly true with regard to difficult to reach bolts, for example, deeply recessed wheel bolts. Very often, specially designed reaction arms or nose extensions are essential. Norbar therefore offers an Engineer to Order service that spans a range from modified reaction arms through to completely one off tools or measurement systems.



Valve actuation using a PTM-52

Here, a wooden model is used to validate the design of a special reaction arm before committing to production.

GLOBAL SERVICE

Norbar is the only torque equipment manufacturer able to offer tool and instrument recalibration services to the original factory standard on four continents. The accredited laboratories in Australia, USA and Singapore use the same equipment and procedures as the factory's UKAS accredited laboratory in the UK. A further Norbar laboratory is in operation in Shanghai.



NORBAR TORQUE TOOLS LTD
Beaumont Road, Banbury, Oxfordshire, OX16 1XJ
UNITED KINGDOM
Tel + 44 (0) 1295 753600
Email enquiry@norbar.com



NORBAR TORQUE TOOLS PTY LTD
45-47 Raglan Avenue, Edwardstown, SA 5039
AUSTRALIA
Tel + 61 (0)8 8292 9777
Email enquiry@norbar.com.au



NORBAR TORQUE TOOLS INC
36400 Biltmore Place, Willoughby, Ohio 44094
USA
Tel + 1 866 667 2272
Email inquiry@norbar.us



NORBAR TORQUE TOOLS (SHANGHAI) LTD
E Building - 5F, No. 1618 Yishan Road, Minhang District, Shanghai
CHINA 201103
Tel + 86 21 6145 0368
Email sales@norbar.com.cn



NORBAR TORQUE TOOLS PTE LTD
Eunos Tech-Park, 60 Kaki Bt Pl # 09-16
SINGAPORE 415979
Tel + 65 6841 1371
Email singapore@norbar.com.au



NORBAR TORQUE TOOLS (NZ) LTD
65a O'Rorke Road, Penrose, Auckland
NEW ZEALAND
Tel + 44 (0) 1295 753600
Email nz@norbar.com.au

www.norbar.com

NORBAR PRODUCT PORTFOLIO



Torque Wrenches



Hand Torque Multipliers



Pneumatic Torque Multipliers



Torque Measurement



Torque Transducers



Ultrasonic Bolt Measurement



Calibration Services



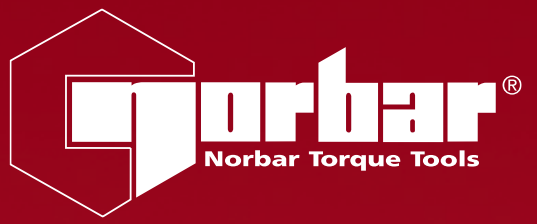
PRECISION TOOLS FOR THE MINING AND REFINING INDUSTRY



Distributed by



PRECISION TOOLS FOR THE MINING AND REFINING INDUSTRY



NORBAR IN THE MINING INDUSTRY

There are few industries in which safety and the cost of down-time are more critical than mining and the subsequent mineral refining processes. As a consequence of this, Norbar's primary involvement in the mining and refining industry is to provide safe and secure bolting of assemblies. This begins at the point of mineral extraction and extends through to the refining and distribution of the end product.

Norbar's involvement does not stop at bolting. Any job requiring the application of continuous high torque can be completed with Norbar's pneumatic tools; for example, valve actuation and valve grinding.

MOBILE FLEET

Norbar plays an invaluable part in getting the off road fleet of equipment going – and keeping it going. Norbar wrenches are commonly used in the factories of the major equipment manufacturers and then again when the equipment arrives at site for final assembly.

The most common applications are wheel bolting, track bolting and dozer wear plate bolting. All of these can be completed with ease and accuracy using Norbar's Pneutorque® pneumatic torque wrenches. Often, special nose extensions or reaction arms are required and these can be purpose designed where a specific application has not been covered before.

Track bolting with Pneutorque® PTM-92



Wheel bolting with Pneutorque® PTM-72



Pneutorque® PTM-92

Pneutorque® PTM-72 with special reaction for Cat® D10 Wear plates



Haul Truck Assembly

STATIC EQUIPMENT

Any mining or mineral refining site will have abundant need for accurate torque control. Applications where equipment failure can result in down-time costing hundreds of thousands of dollars per day drive home the need to bolt correctly every time.

A classic example of this is mill liner bolting. Traditionally used impact wrenches lack the required torque control to reliably attach the mill liners and have serious health and safety implications for operators due to extended periods of exposure to noise and vibration. Norbar Pneutorques® provide smooth, continuous and controllable torque with low noise and exceptionally low vibration levels and are now a popular choice for mill liner bolting.

Due to the extremely demanding nature of the environment in which the mill liner bolt functions, a further stage of validation is often employed. Using ultrasound, Norbar's USM-3 can accurately establish the tension in the bolt by measuring the bolt extension due to the tightening process. The USM-3 has been laboratory and field proven to be the most accurate, reliable and cost effective solution to bolting failures which could place workers at risk, lead to lost production and cause damage to capital equipment.

Flange bolting is another application where Pneutorques® can demonstrate their outstanding combination of accurate torque control but with low noise and vibration. However, for low height applications hydraulic torque wrenches will often be the preferred method of bolting. Norbar offers both Square Drive Series "NSD" and Hex Link Series "NHCL" hydraulic wrenches, specifically designed for extremely low height access applications. Our robust and lightweight aluminium body completely encloses the drive train keeping the crucial lubricant inside the tool while significantly reducing the opportunity for contamination from the outside elements.



Special reaction designed for mill liner bolts



NSD Hydraulic Torque Wrench

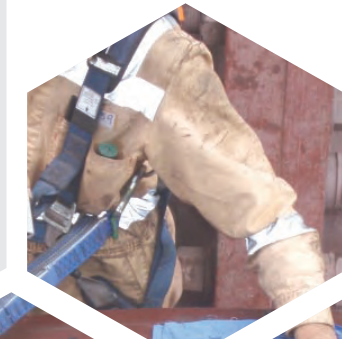


Mill Liner Bolting

USM used to verify bolt tension on mill liner replacement



USM-3 Ultrasonic Bolt Meter



Flange bolting with a PTM-52

Take Pride – Torque Norbar